

NATIONAL TRAUMA INSTITUTE IMPACT STATEMENT

Published in 2011



Funding Research ■ Changing Practice ■ Creating Awareness

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LETTER FROM THE CHAIRMAN



The leading cause of death for children and adults under the age of 44 is trauma, and traumatic injury in the U.S. claims the lives of nearly 179,000 people and partially or completely disables nearly one million people every year. In addition to a human cost, it has an economic cost of nearly \$700 billion a year.

While many civilians have benefitted from the medical advances made in treating war injuries, we cannot and should not count on military research findings as the only solution to the trauma epidemic. Trauma research is shockingly under-funded. There are 27 National Institutes of Health (NIH) or NIH Centers, but trauma doesn't have a dedicated institute, and thus, there is no centralized, organized infrastructure to research better treatment strategies as has been done so well with cancer, stroke, heart disease and HIV/AIDS.

Instead, trauma research is cobbled together out of multiple programs and agencies. Outside of the NIH, Congress directs research programs through the Department of Defense, but a minority of grant funding has been directed toward trauma research.

In terms of years of life lost (millions of dollars per years of potential life lost per 100,000 population), the NIH support ratio for HIV is \$3.51, for cancer \$1.65, and for trauma, a mere ten cents. Consequently, much progress has been made in the diagnosis and treatment of people afflicted with HIV/AIDS, heart and vascular disease and cancer, while trauma deaths continue to rise.

The non-profit National Trauma Institute (NTI) was formed in 2006 in response to this lack of attention to trauma. Our country needs and must have NTI to be accountable and responsible for compiling a national research agenda with priorities; developing and maintaining a system, with a network of civilian and military organizations that work together for large-scale clinical trauma trials; and following clinical studies through to completion, including publishing outcomes that change the way trauma care is practiced and delivered.

This is the way we can save and change lives.

A handwritten signature in black ink that reads "Timothy C. Fabian, MD, FACS". The signature is written in a cursive, flowing style.

Timothy C. Fabian, MD, FACS
Chairman, National Trauma Institute

MISSION

TO REDUCE INJURY, DEATH
AND DISABILITY BY:

- ELEVATING TRAUMA ON THE NATIONAL RESEARCH AGENDA
- INCREASING SCIENTIFIC KNOWLEDGE RELATED TO TRAUMA
- CHANGING CLINICAL PRACTICE THROUGHOUT THE NATION AND WORLD

VISION

TO BE RECOGNIZED AS THE PREMIERE
GRANT-MAKING INSTITUTION FOR
TRANSLATIONAL TRAUMA RESEARCH.

DID YOU KNOW?

- EACH YEAR, TRAUMA ACCOUNTS FOR 37 MILLION EMERGENCY DEPARTMENT VISITS AND 2.6 MILLION HOSPITAL ADMISSIONS.
- SOMEONE IN THE U.S. DIES FROM A TRAUMATIC INJURY EVERY THREE MINUTES.
- TRAUMA CUTS ACROSS AGE, RACE, GENDER AND ECONOMIC BOUNDARIES.
- IN OPERATION ENDURING FREEDOM (OEF), OPERATION IRAQI FREEDOM (OIF) AND OPERATION NEW DAWN (OND) THERE HAVE BEEN MORE THAN 43,000 INJURED AND NEARLY 6,000 DEATHS FROM TRAUMA (AS OF MARCH 2010).
- THE ECONOMIC COST OF TRAUMA IS MORE THAN \$700 BILLION A YEAR, INCLUDING MEDICAL CARE COSTS AND PRODUCTIVITY LOSSES.
- TRAUMA IS THE LEADING CAUSE OF THE DEATH OF CHILDREN IN THIS COUNTRY.
- TRAUMA IS THE LEADING CAUSE OF DEATH IN THE POPULATION BETWEEN THE AGES OF 1 AND 44.
- THE EFFECT OF TRAUMA ON PRODUCTIVE LIFE YEARS LOST EXCEEDS THAT OF ANY OTHER DISEASE.
- AMONG PEOPLE 65 YEARS AND OLDER, FALLS ARE THE LEADING CAUSE OF INJURY DEATHS AND THE MOST COMMON CAUSE OF NONFATAL INJURIES AND HOSPITAL ADMISSIONS FOR TRAUMA, ADDING SIGNIFICANTLY TO MEDICARE COSTS.

“The Secretary of the Department of Health and Human Services should conduct a study to examine the gaps and opportunities in emergency and trauma care research....this study should include consideration of training of new investigators, development of multicenter research networks, funding of General Clinical Research Centers...involvement of emergency and trauma care researchers in the grant review and research advisory processes, and improved coordination through a dedicated center or institute.”

– 2007 Institute of Medicine Recommendation

RECENT ACHIEVEMENTS

- Assembled the NTI Science Committee, composed of many of the nation’s most highly regarded trauma surgeons and researchers, and established a rigorous proposal review process.
- Evaluated nearly 200 research pre-proposals through two national calls for proposals. The initial RFP drew 85 pre-proposals from across the country and resulted in the funding of seven important clinical studies, totaling over \$1.4 million. The second RFP yielded more than 90 pre-proposals, and resulted in 9 awards totaling \$2.8 million.
- Conducted the 16th Annual Trauma symposium featuring 100 prominent speakers from all military services as well as preeminent civilian medical research institutions. The symposium program included lectures on provider resiliency, traumatic brain injury, and PTSD as well as a hands-on workshop on advanced airway techniques.
- Completed development of an Intensive Care Unit (ICU) registry in San Antonio with nearly 300 data elements. The ICU registry includes two participating centers currently and plans to incorporate other facilities in South Texas.
- Created the “Stop the Bleeding” initiative to raise funds specifically for research related to hemorrhage, the condition responsible for the majority of preventable deaths of U.S. soldiers in Iraq and Afghanistan.
- Saw FDA approval for the Wireless Vital Signs Monitor (WVSM), a device set to revolutionize pre-hospital care for battlefield injuries—developed by Athena, Inc. and funded by NTI through the Texas Emerging Technology Fund.
- Established an online giving capability and developed a strategy to diversify funding sources. NTI is the only organization working to expand both public and private funding for trauma research.



WHY WE'RE HERE

FAMILY EMERGES FROM NIGHTMARE BELIEVING IN HEROES

Six-year-old Nicholas Velasquez was not expected to live after a drunk driver slammed head-on into his family's car. The highly trained paramedics who arrived at the scene of the crash within minutes were able to stabilize the San Antonio boy enough to transport him, with sirens screaming, to University Hospital—a Level 1 Trauma Center fully staffed with surgeons and specialists around-the-clock.

Nicholas' abdominal wall was destroyed, his intestines severely damaged and his aorta torn. In addition, his spine was broken and, due to blood loss, he had severe vascular complications in his legs.

"He is definitely one of the sickest children we've taken care of who survived," said Dr. Ronald Stewart, the attending trauma surgeon at University Hospital that evening and a National Trauma Institute board member. After multiple surgeries, tense moments when it was unclear whether he would survive, and many long months of agonizing rehabilitation, today, Nicholas plays soccer. His mother, Angelica, is grateful every day for the gift of life that Dr. Stewart and every trauma care professional—from the paramedics to the rehabilitation specialists—gave her son on his journey between the collision and his return to a normal, happy childhood.

This same tale plays out in emergency departments and ICUs across the country every day, yet there are many who are not so lucky. Thousands more people could survive their traumatic injuries, and thrive like Nicholas, if only the right treatments were available. More than 179,000 people in the United States die each year, and hundreds of thousands more are disabled as a result of traumatic injury.



LESSONS LEARNED IN WAR RESULT IN MORE SURVIVORS

Derek McGinnis, a hospital corpsman in the U.S. Navy, was dispatched to pick up wounded marines during the 2004 Fallujah Offensive in Iraq. As his Humvee ambulance paused on the street, it was broadsided by a suicide driver, whose vehicle exploded on impact and ripped the ambulance to shreds.

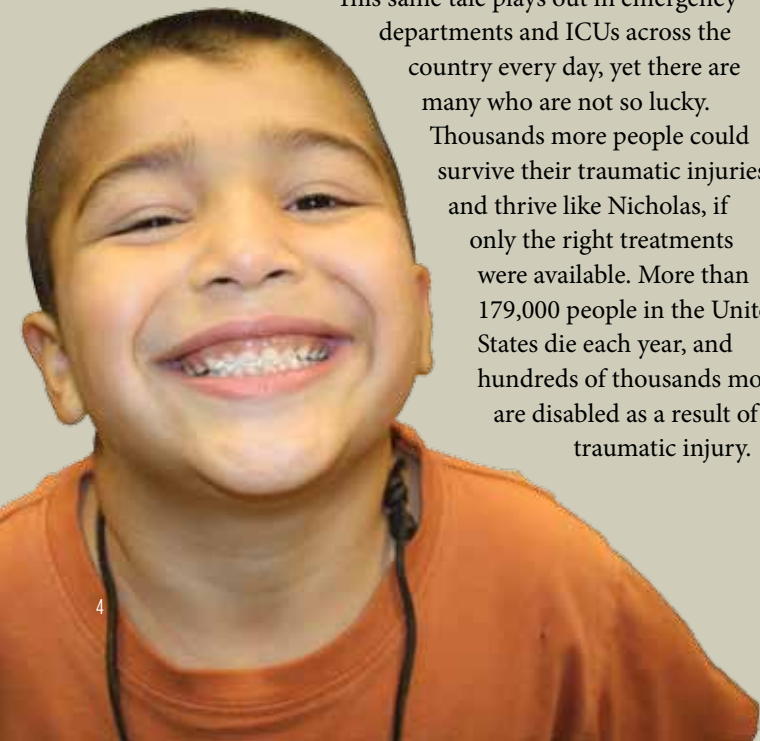
If this had happened in a previous war, Derek would be dead. His left leg was nearly blown off, the entire right side of his face and much of his body was mutilated beyond recognition with flying shell fragments, his right eye was severely damaged, his brain jarred dangerously in the blast.

Through the highly evolved U.S. military trauma system, Derek's nearly lifeless body made it to a field hospital piled in the back of a vehicle with several other wounded men. He had lost a lot of blood, and the trauma surgeon had to amputate his leg in order to save his life.

With blood stores depleted due to the large number of wounded, the Navy nurse in attendance ran to the mess hall and jumped up on a table to activate a walking blood bank, shouting, "If you haven't had a tattoo or been treated for anything in a year, get to the SST and give blood now!"

Within two hours, the nurse boarded a helicopter with the sedated corpsman: In a race to save his life, they took off for the hospital in Balad.

It is thanks to advances in emergency response and trauma care learned over the past decade of war that Derek is alive today. In spite of his prosthetic leg, he runs marathons to raise money for the Semper Fi Fund in support of his fellow injured veterans and their families. Many more soldiers could have survived and the tens of thousands injured could have improved outcomes if advances in care came more quickly.





NTI RESEARCH PRIORITIES

HEMORRHAGE

INFECTION

BURNS

DISASTER PREPAREDNESS

AIRWAY AND VENTILATION STRATEGIES

TECHNOLOGY DEVELOPMENT

These urgent research priorities in clinical trauma research were determined by the NTI Board of Directors and are consistent with previous lists of research priorities in trauma.¹ This list describes areas in trauma where research is lacking, and where additional evidence-based data could lead to significant life-saving improvements in treatment of trauma victims. The research priorities in trauma have been determined over many years, and have not altered significantly over the past decade, because funding to conduct large, multicenter clinical trials has not been available.

¹ Hoyt, D.B., Holcomb, J., Abraham, E., Atkins, J., and Sopko, G. (2004) Working Group on Trauma Research Program summary report: National Heart Lung Blood Institute (NHLBI), National Institute of General Medical Sciences (NIGMS), and National Institute of Neurological Disorders and Stroke (NINDS) of the National Institutes of Health (NIH), and the Department of Defense (DOD). *J Trauma* 57, 410-415



PROPOSAL REVIEW PROCESS

Research priorities for each RFP, all reviews and invitations are directed by the National Trauma Institute Science Committee.

- 1 RFP ANNOUNCEMENT
 - A request for pre-proposals is distributed throughout the trauma community
- 2 PRE-PROPOSAL REVIEW
 - Pre-proposals are reviewed according to the criteria
- 3 FULL PROPOSAL INVITATION
 - Full proposals are invited from those scoring in the highest bracket
- 4 FULL PROPOSAL REVIEW
 - Full proposals are scored again, according to the criteria
 - Proposals are assigned to primary and secondary reviewers, who present them for discussion during a face-to-face Science Committee Review meeting
 - Reviewers with conflicts of interest recuse themselves during discussion and voting
- 5 AWARD ANNOUNCEMENT
 - Award decisions are made based on the review criteria and the level of funding available
- 6 CONTRACTING
- 7 STUDY BEGINS
- 8 QUARTERLY AND ANNUAL REPORTING
- 9 DISSEMINATION OF RESEARCH RESULTS THROUGH PUBLICATIONS AND NATIONAL MEETING PRESENTATIONS

PROPOSAL REVIEW CRITERIA

- Scientific Merit
- Clinical Relevance
- Clinical Impact
- Innovation
- Feasibility of Completing Stated Objectives in Study Period
- Military Relevance
- Appropriateness of the budget for the described study
- Potential for Follow-On Studies
- Multicenter Collaboration

PICTURED: Dr. Basil A. Pruitt, Jr. (top), Editor of the Journal of Trauma and Professor of Surgery at the University of Texas Health Science Center at San Antonio, and Dr. Andrew B. Peitzman, Professor of Surgery and Vice Chairman at the University of Pittsburgh Medical Center, consider research proposals at the January 2011 Science Committee Review Meeting.



FUNDED STUDIES

The following studies were selected via two national calls for proposals that drew nearly 200 pre-proposals from institutions across the country. Studies got underway in late 2010, and results are expected in 2011 and 2012. Outcomes of these studies will be published in peer-reviewed medical journals and presented at scientific and clinical meetings.

INFECTION

***Joel B. Baseman, PhD | University of Texas Health Science Center at San Antonio
Mycoplasma Pneumoniae in the ICU***

Mycoplasma pneumonia is a type of community-acquired pneumonia accounting for 30-40% of all cases of community-acquired pneumonia, and as many as 18% of the cases that require hospitalization. Preliminary data show that this type of pneumonia is associated with more days on the ventilator and lower oxygen levels. This particular type of pneumonia is difficult to identify, and most patients with ventilator-associated pneumonia are not tested for it. This multicenter study uses a new test to confirm the presence of the Mycoplasma bacteria in an attempt to determine the incidence of this particular type of pneumonia and its impact on the number of days on the ventilator, oxygen levels in the blood and death rate.

***Robert Maxwell, MD | University of Tennessee College of Medicine, Chattanooga
Methicillin-Resistant Staphylococcus Aureus (MRSA) in a Trauma Population:
Does Decolonization Prevent Infection?***

MRSA is a common type of bacteria that can live on the skin and has become highly resistant to antibiotics. The bacteria is one of the most common causes of healthcare-associated infections, ranging from simple skin and tissue infections to those that are life-threatening. This multicenter study looks at those trauma patients who carry the MRSA bacteria upon arrival at the hospital and the effectiveness of treatments to destroy the bacteria. The study is designed to determine what specific MRSA bacteria the patient has and whether it is causing an infection, as well as whether attempts to eliminate it reduce the length of time in the hospital, ICU and on the ventilator, and whether survival is improved.

HEMORRHAGE/RESUSCITATION

Mitchell Cohen, MD | University of California, San Francisco
Timing and Mechanism of Traumatic Coagulopathy

After a traumatic injury, hemorrhage is responsible for over 35% of pre-hospital deaths and over 40% of deaths within the first 24 hours. The injured body's inability to form a blood clot is part of the hemorrhage process, but the specific mechanisms of these clotting problems are not well understood, making diagnosis and treatment challenging. This multicenter study seeks to determine the incidence of clotting problems, describe the cellular characteristics of clotting abnormalities, and develop treatment pathways based upon specific clotting characteristics.

H. Gill Cryer, PhD | University of California, Los Angeles
Transfusion of Stored Fresh Whole Blood in a Civilian Trauma Center: A Prospective Evaluation of Feasibility and Outcomes

The injured body's inability to form a blood clot is part of what prolongs hemorrhage after a traumatic injury. While many recent studies have found that giving the patient red blood cells, plasma and platelets (the individual elements of blood or component therapy) improves survival, some patients still bleed and die, even after receiving a blood transfusion. Some studies indicate that fresh whole blood (blood that has not been separated into its separate parts) is superior to the use of blood components. This study aims to determine how long fresh whole blood can be stored before use and still provide benefits to the patient.

Jay Doucet, MD | University of California, San Diego Medical Center
Detection and Management of Non-Compressible Hemorrhage Using Vena Cava Ultrasound

Trauma patients who arrive at the hospital with internal bleeding often have low blood pressure, which is life-threatening. Discovering the extent of a patient's internal bleeding and low volume is paramount to appropriate treatment, yet can be difficult to assess. The large blood vessel that returns blood from the lower portion of the body to the heart (the vena cava) is known to empty when the patient has significant blood loss. This multicenter study proposes to measure the diameter of that blood vessel at intervals with a handheld ultrasound device. These serial measures may identify patients who are likely to require surgery, enabling definitive treatment earlier and decreasing complications and mortality.

Jean-Francois Pittet, MD | University of Alabama, Birmingham
Antioxidant Vitamin Therapy for Coagulopathy and Nosocomial Pneumonia after Severe Trauma

The body's inability to form a blood clot is part of the hemorrhage process following a traumatic injury. One of the reasons patients with severe bleeding don't clot normally is related to a derangement of protein C, a substance that normally prevents unwanted spontaneous blood clots. Lower levels of antioxidant vitamins C and E after severe trauma may affect protein C and its role in clotting, and higher levels of these vitamins have been shown to reduce death, organ failure and infections. This study looks at the administration of vitamins C and E, a safe and inexpensive therapy, and their effect on clot formation and infection. The results of this study may help to find new, simple treatments to reduce the severity of bleeding and infection after trauma.

Carrie Sims, MD | University of Pennsylvania
Vasopressin Supplementation during the Resuscitation of Hemorrhagic Shock

Although aggressive treatment of trauma with intravenous fluids and blood products has been the gold standard, it also has complications. One result of massive resuscitation is a low level of vasopressin, a critical hormone needed to support blood pressure. Although high dose vasopressin supplementation has been shown to improve blood pressure, decrease blood loss and improve survival in animal models, clinical studies investigating vasopressin are limited. This study aims to: determine the impact of giving the patient vasopressin during resuscitation; identify risk factors for low vasopressin levels; and evaluate the use of copeptin, a biomarker, in monitoring the level of vasopressin and predicting the best resuscitation methods.



INJURY COMPLICATIONS

Suresh Agarwal, MD | Boston Medical Center

Acute Lung Injury Ventilation Evaluation (ALIVE) Trial

Acute lung injury is fatal 30-40% of the time and is associated with approximately 75,000 deaths in the United States annually. Mechanical ventilation (respirator) techniques remain the only accepted treatment therapy, but the associated risks include lung collapse, increased time on the ventilator and increased incidence of pneumonia. This large, multicenter study compares the traditional ventilator therapy to a new ventilator therapy that may reduce these risks. Preventing and improving treatment of acute lung injury and reducing the incidence of infection may significantly reduce the economic and human burdens, including the number of deaths, and time spent on the ventilator and in the Intensive Care Unit.

Mark Cipolle, MD, PhD | Christiana Care Health System, Delaware

The Safety and Efficacy of Platelet Transfusion in Patients Receiving Antiplatelet Therapy that Sustain Intracranial Hemorrhage

Bleeding in the brain is the major cause of death and disability in traumatic head injury and stroke. Despite treatment, some patients continue to bleed. Many patients are given antiplatelet medications that stop clots from forming to reduce the risk of heart attack or stroke. While these medications do not cause bleeding in the brain, they may worsen it once it has begun. This study examines whether giving these patients a platelet transfusion (one of the components in blood that forms a clot) decreases the amount of bleeding or keeps it from expanding, improving outcomes, and reducing the risk of heart attack or stroke.

Martin Croce, MD | University of Tennessee Health Science Center, Memphis

Multicenter Prospective Evaluation of the Ventilator Bundle in Injured Patients

Ventilator-associated pneumonia (VAP) is the most common serious infection that occurs in severely injured patients. VAP prolongs the patient's days on the ventilator, days in the Intensive Care Unit and overall hospital stay and, therefore, adds significantly to healthcare costs. Moreover, approximately 20% of those who develop VAP will die. To prevent VAP, doctors often use a group or "bundle" of strategies together, such as head elevation, sedation, and other drug treatments; however, there is little scientific evidence to support the effectiveness of the bundle. This multicenter study looks at the impact of the ventilator bundle and different ways of diagnosing VAP after injury. Specifically identifying the most useful parts of the ventilator bundle for VAP prevention will lead to better and shorter treatment and reduced costs.

Lena Napolitano, MD | University of Michigan, Ann Arbor

Hepcidin and Anemia in Trauma

Anemia (low hemoglobin and red blood cell count) is a problem in trauma patients, particularly in the recovery phase, since it can inhibit trauma patients from participating in physical therapy. Hepcidin, a peptide made in the liver, plays a major role in how and why anemia develops by decreasing iron absorption across the intestine and decreasing the release of iron. Hepcidin is increased in states of inflammation, and likely plays an important role in the acute inflammation that occurs with trauma. This study explores how long anemia persists, why anemia does not resolve and the levels of hepcidin in trauma patients. The result of this study may be therapeutic treatments for anemia in the trauma patient.

Fredric M. Pieracci, MD, MPH | University of Colorado, Denver

A Multicenter, Randomized, Double-Blind Comparison of Intravenous Iron Supplementation to both Enteral Iron Supplementation and Placebo for the Treatment of Anemia of Traumatic Critical Illness

Anemia (low hemoglobin and red blood cell count) is common in trauma patients, but current therapies to treat anemia increase the patients' risk of infection and organ failure. One of the principal causes of anemia is low iron or iron that can't participate in making red blood cells. Previous studies have suggested that giving the patient iron intravenously is effective in treating the anemic patient; however, the benefit of this has never been tested among anemic ICU patients. This large, multicenter study evaluates the risks and benefits of intravenous iron supplementation in an effort to identify a cost-effective treatment solution.

FUNDED STUDIES:
INJURY
COMPLICATIONS
(CONTINUED)



Martin Schreiber, MD | Oregon Health & Science University
Thrombelastography (TEG) Based Dosing of Enoxaparin for Thromboprophylaxis: A Prospective Randomized Trial

Blood clots in the lungs are the third most common cause of death in major trauma patients who survive at least 24 hours. Doctors are challenged to keep a patient's blood thin enough so blood clots don't form but not so thin that the patient bleeds. Current treatment includes a medication (enoxaparin) that prevents blood clots from forming, but recent data suggests that the standard dose of enoxaparin doesn't adequately prevent clots. Thromboelastography (TEG) is a blood test that looks at each step of blood clot formation. This study will determine whether TEG can be used to adjust the dose of enoxaparin and thereby reduce blood clot formation in more patients. Reducing the incidence of blood clots will reduce a patient's time in the ICU, as well as reduce related complications and rates of death.

INJURY TREATMENT/COMPARISON

Shahid Shafi, MD, MPH | Baylor Research Institute
Comparative Effectiveness of Clinical Care Processes in Resuscitation and Management of Moderate to Severe Traumatic Injuries

Injured patients treated at designated trauma centers are more likely to survive than patients treated at hospitals that are not designated as trauma centers. However, it has recently been shown that some trauma centers have higher rates of mortality than others. If trauma centers have similar structures ensured by the designation process, then variation in patient outcomes must be related to differences in clinical practices. This multicenter study explores clinical care processes for the management of trauma patients and their variability, aiming to identify the specific processes that improve patient outcomes as well as those that raise healthcare costs with no improvement in outcomes.

Jason L. Sperry, MD, MPH | University of Pittsburgh
Characterization of the Effects of Early Sex-Hormone Environment Following Injury

Evidence suggests that males and females tolerate severe injury differently, with a greater protection afforded to females. Determining the mechanisms responsible for the gender-based differences after injury, focusing specifically on the early levels of estradiol and testosterone, may predict those at highest risk for poor outcome and promote interventions that can improve outcomes for all injured patients. The goal of this study is to determine if these levels early after injury have an effect on the immune response, resuscitation and blood transfusion requirements, and important clinical outcomes including infection, organ failure, and death rate.

Ben Zarzaur, MD, MPH | University of Tennessee Health Science Center, Memphis
Splenic Injury Prospective Outcomes Trial

Nearly 39,000 adults will suffer a blunt spleen injury from trauma this year. Patients who are discharged from the hospital after only a few days may suffer sudden spleen rupture, a life-threatening condition. This large, multicenter study follows patients with blunt spleen injury for six months to determine the actual incidence of spleen rupture and compares the effectiveness of several treatments. This research is expected to lead to the development of strategies that will expose adults with blunt spleen injuries to the least amount of risk while enabling the most patients to retain their spleens.

FUNDED PROJECT

NEXT GENERATION MONITORING SYSTEM TO GIVE TRAUMA VICTIMS BETTER CHANCE OF SURVIVAL

The vital signs monitors currently in use to keep tabs on trauma victims during emergency air and ambulance transportation are big, bulky and dumb. They take up a lot of space and, while they provide medics with a basic set of vital signs—heart rate, blood pressure and blood/oxygen level—they offer only data, not real information about the status of the patient.

Thanks to the visionary work of Mark Darrah at Athena GTX and Jose Salinas with the United States Army Institute of Surgical Research (USAISR) and funding and oversight from the National Trauma Institute, first responders in both military and civilian settings are about to have access to a new device and technology that will overcome many of the limitations of the vital signs monitors of the past.

Athena's Wireless Vital Signs Monitor (WVSM) is light, weighing in at just 500 grams (a little over a pound). It attaches to the arm and uses a wireless technology to transmit vital signs to a receiving station (either a PDA, smart phone or laptop) that analyzes the data and runs algorithms to help medics determine if and when emergency intervention is needed.

In military settings, the WVSM will also serve the crucial function of passing on information about patients throughout the evacuation chain. From point of injury to helicopter evacuation to combat support hospital and through higher levels of care, the monitor will store all data and interventions from the moment it is strapped onto a wounded soldier.

Having received FDA approval in August 2010, the device is now being tested in clinical trials using two civilian helicopter services in Texas: Houston Lifeflight, which flies out of Memorial Hermann Medical Center; and San Antonio AirLIFE, which flies to both University Hospital and Brooke Army Medical Center. Already commercially available, the clinical trials will confirm the device's utility in decreasing time to first intervention.

The National Trauma Institute funded development of the WVSM through a grant from the Texas Emerging Technology Fund (ETF). For more information on Athena and the Wireless Vital Signs Monitor, visit www.athenagtx.com.





FINANCIALS

The National Trauma Institute receives funding from the federal government, as well as from the Texas Emerging Technology Fund, corporations, foundations and private donors. With total assets of \$2.4 million at the end of 2010, NTI will continue its mission to fund and manage clinical trauma research that results in reduced deaths and disabilities following traumatic injury.

NTI expends 72% of its revenues in furtherance of research and education programs, with the remaining 28% for support of development, legislative relations, management and operations.

NTI's development program has been strengthened to work toward an increase in the philanthropy component of our revenue and in the public awareness of the health impact of trauma on the U.S..

NTI keeps its indirect, or overhead, rate as low as possible, even below the allowable rate, so that the largest amount of funds possible can be devoted to clinical research. The applied rate has been 15-25% on federal contracts.

Carneiro, Chumney & Co LC performs NTI's annual financial audit. As in prior years, no material adjustments were recommended in the 2010 audit. Required federal tax returns and compliance documents are filed on a timely basis and made available to the public.

BALANCE SHEET

as of December 31, 2010

ASSETS

Current Assets

Bank Accounts	2,043,542.81
Accounts Receivable	386,852.37
Other Current Assets	11,386.22
Total Current Assets	\$2,441,781.40

Fixed Assets	8,571.14
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TOTAL ASSETS \$2,450,352.54

LIABILITIES AND EQUITY

Liabilities

Current Liabilities

Accounts Payable	209,250.77
Credit Cards	4,565.82
Other Current Liabilities	\$1,307,569.47

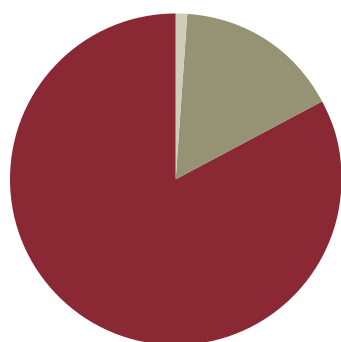
TOTAL LIABILITIES \$ 1,521,386.06

EQUITY 928,966.48

TOTAL LIABILITIES AND EQUITY \$2,450,352.54

ASSETS

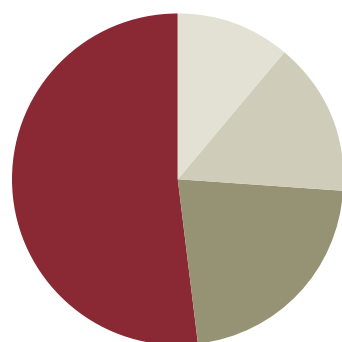
as of December 31, 2010



- Cash (83%)
- Grants Receivable (16%)
- Other Assets (1%)

LIABILITIES AND EQUITY

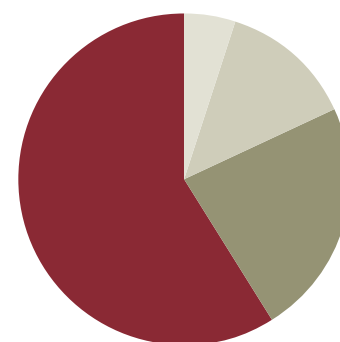
as of December 31, 2010



- Deferred Revenue (52%)
- Temporarily Restricted Net Assets (22%)
- Unrestricted Net Assets (15%)
- Other Current Liabilities (11%)

OPERATING COSTS

Fiscal Year 2010



- Research Programs (59%)
- Management/Administration (23%)
- Symposium (13%)
- Development (5%)

NTI MISSION AND MODEL

Our country needs to be conducting more research related to traumatic injury and must have an organization that is accountable for compiling a national research agenda; developing and maintaining a system to conduct large-scale clinical trauma trials; and following clinical studies through to completion, publishing outcomes that change the way trauma care is practiced and delivered. This is the way we can save and change lives. This is NTI's mission.

Today NTI is the only organization whose sole focus is to expand funding for trauma research as a whole, and it is a unique collaboration of organizations and individuals who represent both military and civilian institutions. In addition, NTI is committed to funding translational research (research that moves results from the laboratory to the bedside), directly answering the call for evidence-based medicine to transform the way physicians approach patient care.

NTI's model is to direct research dollars through a rigorous peer-review process run by a high caliber Science Committee that has been praised by the Telemedicine and Advanced Technology Research Center, an office of the headquarters of the US Army Medical Research and Materiel Command (USAMRMC). Indeed, our unbiased, scientifically stringent process is our greatest asset. Our Science Committee comprises leading trauma surgeons from across the country who also play key roles in the nation's surgical societies, as required in our bylaws; thus, they are fully aware of the extant literature, studies currently being funded and areas of greatest need. Because of the extensive knowledge base that resides within NTI, the organization is uniquely qualified to set the national agenda and effectively distribute funding to research with the greatest promise.

Finally, the National Trauma Institute is committed to efficient and cost-effective use of research dollars. While universities typically claim a 50 percent or more indirect cost on the research grants they receive, NTI's indirect cost is only 15 to 25 percent, enabling more money to go directly to research. NTI runs its operations with a lean, nimble and experienced staff with the right background to achieve the vision of improving outcomes for trauma patients through research and education.

SINCE ESTABLISHING TRISAT, ITS PREDECESSOR ORGANIZATION, AND THROUGH THE CURRENT YEAR, NTI HAS MANAGED \$20.5 MILLION IN RESEARCH FUNDING. TODAY, MULTIPLE HIGH-POTENTIAL STUDIES ARE UNDERWAY AT INSTITUTIONS ACROSS THE UNITED STATES ADDRESSING ISSUES SUCH AS HEMORRHAGE, HOSPITAL-ACQUIRED INFECTIONS AND RESUSCITATION.



WAYS TO SUPPORT NTI

- DONATE TO NTI'S STOP THE BLEEDING CAMPAIGN
- SUPPORT GENERAL TRAUMA RESEARCH
- CONTRIBUTE TO THE ANNUAL FUND
- JOIN NTI'S RESEARCH SOCIETY
- MAKE A MEMORIAL OR HONOR GIFT
- SUPPORT THE ANNUAL TRAUMA SYMPOSIUM
- NAME AN NTI FUND
- PROVIDE GENERAL OPERATING SUPPORT

2010 SUPPORTERS

SYMPOSIUM CORPORATE SUPPORTERS

KCI
Northwestern Mutual

Sangart
Smith & Nephew

SYMPOSIUM IN-KIND SUPPORTERS

KSTX 89.1
San Antonio Express-News

SYMPOSIUM VENDING SUPPORTERS

Advanced Infusion
Argentum Medical LLC
Belmont Instrument Corporation
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